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<td>6.1 Approach</td>
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<td>6.2 Recommendations</td>
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Executive summary

SKM have been appointed to undertake a traffic, parking and pedestrian study in the town centre of Bega, NSW. A key focus of the study was a review of existing parking supply and demand and recommendations for future parking management strategies.

Review of existing conditions

The Bega town centre currently has a mix of restricted and unrestricted on-street parking and a number of restricted and unrestricted car parks. In total, Bega town centre provides 1,629 free parking spaces. Of those, nearly 60% have no time restriction. Two-thirds (1,077) of all parking spaces provided are in off-street car park areas, some of them covered whereas one-third (552) of the provided parking is on-street kerb side parking. A parking inventory is shown in Table 1. An overview map of all parking areas can be found in on page 4.

Table 1: Current parking supply and restrictions in Bega town centre

<table>
<thead>
<tr>
<th>Parking Area and Location</th>
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<td>Coles car park</td>
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<tr>
<td>Sapphire Market Place (lower)</td>
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</tr>
<tr>
<td>Sapphire Market Place (upper)</td>
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Kerbside Parking

<table>
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<tr>
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Total 956 155 352 155 6 5 1,629

The Littleton Gardens/ Zingel Place zone marks the centre of Bega and retail, service and administrative facilities are located around it. It is important to create a permeable environment with easy pedestrian access from Littleton Gardens/ Zingel Place to the key retail, service and administrative facilities. The majority of shop fronts are facing away from Littleton Gardens/ Zingel Place and towards the surrounding streets.
A parking beat survey, undertaken over four days in March 2013, recorded the availability and occupancy of parking spaces on-street and in the main car parks of the town centre. This survey did not include regular counts in Parker Street and Bega Street, as those areas were found mostly unoccupied throughout the day. The key conclusions from the parking survey are:

- Parking demand on a weekday in Bega is higher between 9am and 4pm with short peak periods mid-morning and mid-afternoon. In general, the highest average parking occupancy is below 80% (of the 1458 parking spaces included in the survey). In most areas, average occupancy for on-street parking and car parks is closer to 60% of the 1458 parking spaces included in the survey.

- The pattern of average occupancy rates throughout the day is consistent across the surveyed weekdays and appears to satisfy demand for the business and retail centre that Bega town centre represents. The overall supply of parking spaces, both on-street and in car parks, is currently exceeding the demand by 20-25% in the direct vicinity of key facilities and by over 50% in areas a 5 minute walk away from key areas.

- The key facilities in the town centre are located along Carp Street between Auckland Street and Gipps Street as well as around Zingel Place. The survey shows that Carp Street parking spaces are highly utilised with occupancy rates above 80% and fully utilised during:
  - Peak ½ hour mid-morning and
  - Peak hour midday.

  This indicates that parking in Carp Street is popular and supply in general meets the current demand and a reduction of parking spaces in Carp Street is not advisable.

A proposal to increase Carp Street parking by introducing angled parking was assessed. It required the implementation of a one-way system for Bega town centre. This would require the re-direction of traffic flows which increases traffic volumes on some roads and turning movements at various intersections. The benefit of four to seven additional parking spaces is negated by the significant disruption of access to the Carp Street retail facilities. It is recommended to maintain all streets in the Bega town centre as two-way streets.

It can be concluded that under the current demand conditions, the parking supply is adequate and there is no indication of a shortage of parking spaces.
Parking strategy

While parking supply in the town centre is adequate, the opportunity to improve access through increased turnover should be explored. This could include the introduction of more short-term parking in the parking areas closest to Carp Street (e.g. in Carp Street and in Zingel Place) and medium-term or unrestricted parking the areas further away from the key facilities. Similarly, access between facilities and parking needs to be improved.

The parking strategy for Bega town centre should include the following approach:

- The parking strategy should focus on servicing the key facilities located along Carp Street and around Zingel Place.
- High quality access to these key facilities needs to be provided from the biggest collection of parking spaces around Zingel Place and the Sapphire Market Place.
- Parking spaces closest to the key facilities should have short time restrictions (e.g. 15min or 30min) to encourage a high customer turn-over and serve ‘one-stop’ users.
- Car parks in the vicinity of key facilities should have longer time restrictions (e.g. 2 hours or 3 hours) and their focus should be on serving ‘multi-stop’ users.
- Unrestricted parking spaces that attract long-term parking should be located furthest away from key facilities to generate short-term parking opportunities close to key facilities.

Currently, three walkways provide access between Littleton Gardens/Zingel Place and Carp Street:
- Unnamed Walkway in north-south direction located between Auckland Street and Ayres Walkway
- Ayres Walkway
- Rixon’s Arcade (privately owned; covered; closed after business hours)

These walkways should be upgraded to enhance ease of access and provide a safe and attractive environment. The upgrades could also provide further business opportunities. A new pedestrian access between Littleton Gardens and the new Target store off Gipps Street should be provided including a crossing facility at Gipps Street.

As a result of the approach outlined, key recommendations for parking in the Bega town centre include:

- All parking should remain free.
- Parking areas within one minute walking time from key facilities should have a mix of 15 min and 30 min parking restrictions to encourage a high parking turn-over. Those areas include:
  - Carp Street (west)
  - Church Street (Carp Street end)
- Parking areas within five minutes walking time from key facilities should have a mix of 1 hour and 2 hour parking restrictions. Those areas include:
  - Auckland Street
  - Gipps Street
  - Carp Street (east)
  - Church Street (Bega Street end)
  - Canning Street
  - Zingel Place
• Parking areas more than five minutes walking time from key facilities should have unrestricted parking. Those areas include:
  o Upper Street
  o Parker Street
  o Bega Street (east)
• Bega town centre car parks should have a 3 hour parking restriction to allow for ‘multi-stop’ trips
  o Coles Car Park
  o Gipps Street Car Park
  o Littleton Gardens
  o Sapphire Market Place
• All parking areas should provide adequate disabled parking.

Figure 1 shows the proposed parking restrictions. The border of each zone indicates the current restriction, with the core designating proposed restrictions. No change in colour indicates no change in parking restriction.

Figure 1: Proposed parking restrictions for Bega town centre
1. Introduction

Bega Township with a population of around 5,000 is located on the far south coast of New South Wales, 500kms by road from Sydney and 600km from Melbourne. It is the centre of a coastal agricultural region with a population of around 35,000.

For the purpose of this study, the Bega town centre comprises the four street blocks bordered by Bega Street, Parker Street, Upper Street and Auckland Street and includes a mix of retail and businesses service amenities. A weekly farmers’ market in Littleton Gardens draws locals and tourist into the town centre area.

1.1 Background

A number of major developments are taking place in and around Bega. The new Bega Bypass, being constructed to the west of the town, is scheduled to open in late 2013. This will remove through traffic from the town centre, significantly reducing traffic volumes on Carp Street and Gipps Street. Close to the township, the new South East Regional Hospital (SERH) is being constructed on Tathra Road; in turn the nearby Bega Hospital will be redeveloped for future use. A number of new retail of developments have either recently opened or are being progressed through the planning process. These developments will have an effect on future parking demand in the town centre area.

SKM have been appointed by Bega Valley Shire Council (BVSC) to undertake a review of the current traffic and parking situation in Bega’s town centre.

1.2 Approach

The first step in this study was to develop an understanding of the current conditions in the Bega town centre. This included a site visit and client and stakeholder meetings. As a result, a parking inventory was developed.

The second stage included undertaking parking beat surveys over four days, focussing on car parking demand within 3 minutes walking time of the town centre, and traffic counts at key intersections. The collated data was analysed and summarised to understand the current parking demand and identify traffic flows and volumes.

Based on the surveys and traffic counts, the third stage of the study was to evaluate different scenarios and options and make recommendations for future parking management schemes.
2. Traffic

2.1 Overview

The Bega town centre is located on the Princess Highway which connects Bega with Narooma in the north, Pambula and Merimbula in the south. The Highway, named Gipps Street and Carp Street in the town centre is the main through road. The town centre has two intersections controlled by traffic lights:

- Auckland Street/ Carp Street
- Auckland Street/ Upper Street

There is also a signalised pedestrian crossing at Church Street, although this has no traffic control.

All other intersections have either stop signs or give-way priority. A bypass is currently under construction that will reduce through-traffic volumes in the town centre. The main road network of Bega is shown in Figure 2.

Figure 2: Bega road network
2.2 Intersection Counts

Intersections counts have been undertaken at key intersections in Bega town centre including:

- Auckland Street/ Carp Street
- Gipps Street/ Carp Street
- Gipps Street/ Upper Street

The counts were undertaken over a period of three weekdays and one Saturday in March 2013. Figure 3 shows the average 2 hour traffic volumes during the AM peak period (7 – 9am) and Figure 4 shows the flows during the PM peak (4 – 6pm). Traffic volumes at the three surveyed intersections on Saturday are less than half of the weekday AM peak period.

The traffic counts show that Carp Street is the busiest section of the road network in the Bega town centre. While traffic in Auckland is of a similar magnitude, heavy vehicles were observed to use the Highway along Carp Street and Gipps Street.

The traffic counts undertaken in March 2013 show that the traffic volumes in the Bega town centre are well within capacity of the road network.
Figure 3: AM peak flows in Bega town centre

- Auckland St: 556, 248, 168, 508
- Carp St: 452, 312, 303, 272, 251
- Upper St: 213, 375, 314
- Gipps St: 205, 524, 303, 251, 500

Traffic flows in vehicles per hour.
Figure 4: PM peak flows in Bega town centre
3. Review of Parking

3.1 Current Situation

The Bega town centre currently has a mix of restricted and unrestricted on-street parking and a number of restricted and unrestricted car parks. The study area is bordered by Auckland Street, Upper Street, Parker Street and Bega Street. The study area includes the following car parks:

- Coles car park – 191 parking spaces; 3 hours free parking
- Gipps Street – 108 parking spaces; unrestricted parking
- Zingel Place – 151 parking spaces; 3 hours free parking
- Sapphire Market Place – 583 parking spaces; unrestricted parking

The on-street parking is restricted in some areas including Carp Street and Auckland Street, in other areas parking is unrestricted and all parking in Bega Town Centre is free. Table 2 below shows all parking areas in the study area, the number of parking spaces provided and the parking restrictions applied.
Table 2: Parking inventory for Bega Town Centre

<table>
<thead>
<tr>
<th>Parking Area and Location</th>
<th>Car Parks</th>
<th>Parking Restriction</th>
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<tbody>
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<td></td>
<td>Parking Area and Location</td>
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<td>Coles car park</td>
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<td></td>
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<td></td>
<td>Littleton Garden</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>Sapphire Market Place (lower)</td>
<td>432</td>
</tr>
<tr>
<td></td>
<td>Sapphire Market Place (upper)</td>
<td>151</td>
</tr>
</tbody>
</table>

Kerbside Parking

| Kerbside Parking          | Auckland Street (south)                        | 25      | 18     |        |        |        | 43    |
|                          | Auckland Street (north)                        |         |        | 37     |        |        | 37    |
|                          | Church Street                                  |         | 26     | 6      |        |        | 32    |
|                          | Gipps Street (south)                           |         |        | 32     |        |        | 32    |
|                          | Gipps Street (north)                           |         |        | 42     |        |        | 42    |
|                          | Canning Street                                 |         | 30     | 4      |        |        | 34    |
|                          | Parker Street                                  |         | 92     |        |        |        | 92    |
|                          | Upper Street (west)                            |         | 32     | 2      |        |        | 34    |
|                          | Zingel Place                                   |         | 15     |        |        |        | 15    |
|                          | Carp Street (west)                             |         | 28     | 5      |        |        | 33    |
|                          | Bega Street (west)                             |         | 47     |        |        |        | 47    |
|                          | Upper Street (east)                            |         | 37     |        |        |        | 37    |
|                          | Carp Street (east)                             |         | 42     |        |        |        | 42    |
|                          | Bega Street (east)                             |         | 32     |        |        |        | 32    |

Total

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<tr>
<td>30 min</td>
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<td>15 min</td>
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</table>

In total, the study area in Bega Town Centre provides 1,629 free parking spaces. Of those, nearly 60% have no time restriction. Two-thirds of all parking spaces provided are in off-street car park areas, some of them covered whereas one-third of the provided parking is on-street kerb side parking.

Accurate, precise and complete data regarding the actual total retail and commercial floor area within the Bega CBD is practically impossible to obtain without a lengthy and detailed door to door inventory of every property and an accurate measurement and analysis of the many mixed and varied uses therein. Given the complexity involved in then determining the required parking numbers in each case, a precise quantification of total car spaces required from a planning and regulatory point of view is impractical to achieve in a timely manner, of very little practical benefit and not within the Brief of this study.

However, on the basis of the Hill PDA Economic Impact Assessment dated September 2008 an extrapolation of approximately 1900 required spaces can be made taking into account subsequent developments. The actual total number of 1629 spaces tallied in this report plus the numerous other adjacent and nearby parking options available, including the many car spaces provided on private commercial properties, that are not included in the tally exceed this approximation by at least 100 parking spaces.

The data collected for this study and the observations made therefrom support the above conclusion that more than adequate parking is provided within and around the Bega CBD.
3.2 Parking Beat Survey

To understand the current parking demand and parking behaviour, a parking beat survey was undertaken covering all on-street parking and all car parks in the study area. The survey recorded in 30min intervals whether an on-street parking spot was ‘available’ or ‘occupied’ and counted the number of occupied parking spaces in each car park. This provides an accurate picture of occupancy rates for each street and across the Bega Town Centre.

The parking beat survey was undertaken over the following periods:
- Thursday, 14 March – 8am to 6pm
- Friday, 15 March (market day) – 8am to 6pm
- Saturday, 16 March – 8am to 2pm
- Tuesday, 19 March (court day) – 8am to 6pm

3.3 On-Street Parking

Parker Street and Bega Street are residential roads with unrestricted parking on either side of the road. During the parking beat survey only very few cars were found parked along those two streets. As the distance to the Bega Town Centre is between 300m and 750m, both streets were not taken into account for the more detailed analysis of potential town centre parking.

The average occupancy of on-street parking spaces (except for Parker Street and Bega Street) on each survey day is shown in the Figure 6 below.
- Figure 6: Average on-street parking occupancy in March 2013

The average occupancy between 8am and 6pm (and 2pm on Saturday) shows a consistent picture across the four survey days. Parking space occupancy starts at around 20% at 8am and consistently increases to around 70% (45% on Saturday) by 11am. The occupancy rate is consistent around 60-70% until late afternoon and then decreases to around 30%.

The survey shows that on-street parking demand in Bega Town Centre on Saturday morning is significantly less than on weekdays.

The key indication from these surveys is that at no time did on-street parking occupancy exceed 76% of available parking spaces.
By way of comparison, Carp Street in the centre of the town centre showed a not-dissimilar profile, as presented represented below.

- Figure 7: Parking occupancy in Carp St between Auckland Street and Gipps Street

3.4 Car Parks

There are four car parks in the Bega town centre: Littleton Gardens, Coles, Gipps Street and Sapphire Market Place. Car parks were surveyed in 30min intervals when the total number of vehicles parked were counted (this survey did not take into account the location of an occupied parking space).

As the Sapphire Market Place car park is operated and managed by Woolworths, the parking survey conducted limited spot counts to get a high level understanding of usage of the car park. It is also understood that the usage of this car park in particular is very much affected by the weather, i.e. during rain or heat this car park has a much higher preference than during dry and cool weather conditions as experienced during the parking surveys in March 2013.

The occupancy rates of the three public car parks can be found in the figures below.
- Figure 8: Occupancy of Coles car park

- Figure 9: Occupancy of Gipps Street car park

- Figure 10: Occupancy of Littleton Gardens car park
Insufficient data points for the Woolworths car park render this assessment of limited value. The results for the three car parks show a significantly lower occupancy rate of 40% and less on Saturday. This is consistent with the results from the on-street parking survey that showed a similar occupancy rate. During weekdays, the occupancy rate for each car park shows a similar pattern throughout each day.

The car park in Gipps Street shows a significant peak in parking demand between 12pm and 2pm when average occupancy is around 60% – 65%. Before and after this peak period the average occupancy drops significantly to 30% or less.

The car park in Littleton Gardens and the Coles car park show similar patterns throughout the weekday with an average occupancy of around 50% - 60% between 10am and 4pm as shown in Figure 12 and Figure 13.
3.5 Discussion

The parking beat survey undertaken in the Bega town centre in March 2013 recorded the availability and occupancy of parking spaces on-street and in the main car parks of the town centre.

The survey of on-street parking spaces shows that on weekdays the average occupancy is around 65% (slightly higher on Friday) between 9am and 4pm. Outside this peak time, occupancy (and therefore parking demand) falls below 40%. The Saturday survey showed a significantly lower demand for parking space. A peak period between 10am and 12pm with an occupancy rate of around 40% was recorded, demand outside this period was around or less than 30%.

The on-street parking survey showed that the highest demand for parking occurs on Carp Street between Auckland Street and Gipps Street. During weekdays, parking occupancy on that stretch of Carp Street was almost consistently above 80% with regular short periods when occupancy exceeded 90%. No other area has a similar consistently high demand for on-street parking spaces.

Areas of Auckland Street, either side of the intersection with Carp Street, areas of Church Street close to the intersection with Carp Street and areas of Upper Street between Auckland Street and Gipps Street are other areas with high demand for on-street parking on weekdays but to a much lesser extent than Carp Street. Occupancy rates in those areas were recorded between 70% and 80%.

The demand for on-street parking in other areas of the Bega town centre was less consistent and a lot lower than in the more central areas. Parker Street and Bega Street, which were originally included in the parking beat survey, showed such low occupancy rates (below 20%) that the survey program was changed to less frequent survey recordings.

The demand for parking in the main car parks in the Bega town centre showed similar patterns to the on-street parking demand. Weekdays had a significantly higher occupancy rate (around 50%-60% with short peaks close to 80%) than the Saturday when average occupancy rates were around 25% with peaks close to 40%.

The key indication from these surveys is that at no time did the car parks exceed 65% occupancy.
The car park in Littleton Gardens and the Coles car park show similar patterns with consistent occupancy rates around 50% - 60% between 9am and 4pm. The car park in Gipps Street has a peak demand around 70% - 80% between 11am and 2pm and a significantly lower demand outside those hours.

### 3.6 Conclusions

The parking beat survey indicates a mix of short-term and long-term parking demand in the Bega town centre. It shows that parking demand on a weekday in Bega is generally highest between 9am and 4pm with short peak periods mid-morning and mid-afternoon. With the exception of certain parts of Carp Street, the highest average parking occupancy is below 80%. In most areas, average occupancy for on-street parking and car parks is closer to 60%.

The pattern of average occupancy rates throughout the day is consistent across the surveyed weekdays and appears to satisfy demand for the business and retail centre that Bega town centre represents. The overall supply of parking spaces, both on-street and in car parks, is currently exceeding the demand by 20-25% in the direct vicinity of key facilities and by over 50% in areas a 5-10 minute walk away from key areas. It can be concluded that under the current demand conditions, the parking supply is adequate and there is no indication of a shortage of parking spaces.

The key facilities in the current layout are located along Carp Street between Auckland Street and Gipps Street as well as around Zingel Place. The survey shows that Carp Street parking spaces are highly utilised with occupancy rates of above 80% at peak times. This indicates that parking in Carp Street is popular and supply in general meets the current demand. It can be concluded that a reduction of parking spaces in Carp Street is not advisable.

While parking supply in the town centre is adequate, the opportunity to improve turnover could be explored. This could include the introduction of more short-term parking in the parking areas closest to Carp Street (e.g. Carp Street, Zingel Place) and medium-term or unrestricted parking the areas further away from the key facilities.
4. **Options for Carp Street**

4.1 **Background**

Carp Street between Auckland Street and Gipps Street has retail activity on both sides of the road. This section of Carp Street currently has 33 parallel parking spaces, the majority of them allowing free parking for 1 hour. The parking beat survey (see Chapter 2) showed a high occupancy rate (close to capacity) for those parking spots. The survey also suggested a high parking turnover.

Suggestions have been made that angled parking could increase the number of parking spots available on Carp Street and a corresponding one-way system (eastbound in Carp Street) would help managing traffic flows.

4.2 **Angled Parking Design**

Australian Standard (AS) 2890.5 states that angled parking can generally provide up to twice as many parking spaces per unit length of kerb compared to parallel parking. Increases in parking spaces depend upon the angle of parking. Smaller angles provide little advantage whilst 90 degree parking accommodates the maximum number of spaces.

The constraining factor in determining appropriate parking schemes on Carp Street is the available road width. The possible conversion of Carp Street into a one-way eastbound road between Auckland Street and Gipps Street provides scope for the implementation of angled parking in this area. There are currently 33 parallel parking spaces in this section of Carp Street. **Figure 14** outlines the current configuration of Carp Street, including total available road width.

- **Figure 14: Current layout and dimensions of Carp Street**

![Figure 14: Current layout and dimensions of Carp Street](image)

A road width of 11.6m fulfils AS 2890.5 requirements for 60 degree angle parking on one side of the street only, with a one-way one-lane traffic flow. Implementation of this parking scheme on the southern side of the road would allow for a total of 40 parking spaces on Carp Street between Auckland Street and Gipps Street. This represents an increase of 7 car spaces or 21% compared to the existing parallel parking arrangement.

The pedestrian blister, between Gipps Street and Church Street currently does not provide for a pedestrian crossing and does not allow parking for 20m on both sides of the road. If this space was fully utilised for angled parking it would provide an extra 6 spaces, bringing the total number of angled parking spaces to 46.
Figure 15: Potential layout of Carp Street with angled parking

There is also sufficient road width for a parking scheme involving 30 degree parking on one side of Carp Street with parallel parking on the opposite side, again with one-way one-lane traffic flow. This scenario could accommodate a total of 37 spaces. 44 spaces would be possible with the removal of the pedestrian blister.

Table 3 summarises the possible parking schemes and shows that 60 degree angled parking will provide the maximum number of parking spaces.

Table 3: Overview of parking spaces in Carp Street in different layout schemes

<table>
<thead>
<tr>
<th>Status Quo</th>
<th>Option</th>
<th>With pedestrian blister</th>
<th>Without pedestrian blister</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Spaces</td>
<td>Parking spaces</td>
<td>Increase</td>
<td>Parking spaces</td>
</tr>
<tr>
<td>33</td>
<td>Southern side only 60° angled</td>
<td>40</td>
<td>7 (21%)</td>
</tr>
<tr>
<td>33</td>
<td>30° angled + parallel</td>
<td>37</td>
<td>4 (12%)</td>
</tr>
</tbody>
</table>

4.3 Impact on Carp Street

Whilst angled parking is able to accommodate an increased number of parking spaces, there are also negative impacts that must be considered. AustRoads’ Guide to Traffic Management Part 11: Parking (2008) describes how any form of angled parking presents a greater risk of collisions and increased delays compared to parallel parking. Parking at any angle necessitates the need for reversing that can cause significant bottleneck effects for through traffic whilst also heightening the risk of collisions involving the reversing vehicle. Furthermore, the increased number of parking bays combined with a reduction in available road space will likely lead to increased delays for traffic caused by cars entering and leaving parking spaces.

Retail outlets along the northern kerb would also lose all direct parking outside their premises.
4.4 Impact on Auckland Street/ Upper Street/ Gipps Street/ Bega Street

The conversion of Carp Street into a one way road will also affect the travel time of westbound vehicles travelling through Bega. These vehicles will need to detour either via Gipps Street, Upper Street and Auckland Street or via Gipps Street, Bega Street and Auckland Street. This detour will add approximately 3 minutes to trip time through this section of Bega, not taking into account any delays at the intersections. Traffic volumes along these streets will also significantly increase due to the detour. This will result in higher traffic noise levels and might have an impact on safety outside schools and churches due to more heavy goods vehicles. Table 4 demonstrates the impact of the detour on traffic volumes in Upper Street and Auckland Street.

Table 4: Traffic impact of Carp Street as one-way street on neighbouring streets

<table>
<thead>
<tr>
<th>Peak</th>
<th>Upper Street - Westbound</th>
<th>Auckland Street - Northbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Existing (vehicles/hr)</td>
<td>With Detour (vehicles/hr)</td>
</tr>
<tr>
<td></td>
<td>Vehicles/hr</td>
<td>Increase [%]</td>
</tr>
<tr>
<td>AM</td>
<td>107</td>
<td>382</td>
</tr>
<tr>
<td>Midday</td>
<td>80</td>
<td>452</td>
</tr>
<tr>
<td>PM</td>
<td>65</td>
<td>351</td>
</tr>
</tbody>
</table>

The intersections of Gipps Street/ Upper Street and Upper Street/ Auckland Street would see an increase of right turning vehicles. The operation of the Auckland Street/ Gipps Street intersection would also be affected and the increased traffic volumes and turning movements could result in a lower Level of Service (LoS). Should this proposed option be considered for the future, a SIDRA analysis should be undertaken to evaluate the impact on the intersection performances.

4.5 Current Parking in Carp Street

A parking beat survey was undertaken in Bega’s town centre in March 2013 to identify the parking hot spots and parking issues. All on-street and off-street parking spaces were reviewed in 30 minute intervals, recording whether a space was occupied or available for parking. The survey gives an indication of parking preferences across the town centre and provides general information on parking turn-over.

Figure 16 below shows the occupancy of Carp Street parking spaces on all four survey days.
The surveys on Tuesday, Thursday and Friday were undertaken between 8am and 6pm and the survey on Saturday was undertaken between 8am and 2pm.

The results show that Carp Street parking spaces are highly utilised with occupancy rates of above 80% at peak times. This indicates that parking in Carp Street is popular and supply in general meets the current demand. The overall average occupancy rate across all survey days is 62% with a slightly higher average on weekdays only. The survey clearly indicates that a reduction of parking spaces in Carp Street is not advisable.

The parking spaces on Carp Street between Auckland Street and Gipps Street have a 1-hour parking restriction. The high occupancy rate on that part of Carp Street indicates a constant turn-over of vehicles and a short stay of occupants. It would be one option to improve parking availability in Carp Street by changing the parking restriction from 1 hour to 30 minutes. This would support Carp Street costumers who just need to visit one shop for a certain product or service before continuing their journey. For those customers requiring more time because they plan on visiting multiple shops, medium term parking is provided in other locations across the Bega town centre.

4.6 Recommendations

This review shows that there is high demand for parking in Carp Street. The current layout of Carp Street provides parallel kerb site parking with 33 parking spaces between Auckland Street and Gipps Street.

The introduction of angled parking is technically feasible, if Carp Street was made a one-way street, and would increase the number of parking spaces from existing 33, to 37 or 40 (depending on the angle of the parking bays).

The creation of a one-way system in the Bega town centre would require the re-direction of westbound traffic via Gipps Street, Upper Street and Auckland Street which increases traffic volumes on this roads and turning movements at three intersections.

In summary, whilst the creation of angled parking is technically feasible for Carp Street between Auckland Street and Gipps Street, the impact on other streets and the retail premises on the northern side of Carp Street outweigh the benefit of four to seven additional parking spaces.
Based on the parking survey undertaken and the review of current traffic conditions, we would recommend the following for Carp Street:

- Retain the existing number of parking spaces as a minimum requirement for Carp Street
- Change the parking restriction for spaces between Auckland Street and Gipps Street from 1 hour to 30 or 15 minutes to provide more parking options for short term parking
- Maintain Carp Street as a two-way street
5. Pedestrian and Cycling Accessibility

5.1 Existing Conditions

The key parking facilities are located at and around Littleton Gardens/Zingel Place, an area providing nearly 50% of all parking in the Bega town centre. The key retail (shops, cafes, supermarkets etc.), service (banks, hairdressers, post office etc.) and administrative (Council, library etc.) facilities in Bega are also located around Littleton Gardens, however, the majority of them is facing Carp Street, Auckland Street or Gipps Street. The buildings provide a physical border and access between parking and these facilities is restricted. Currently, three walkways provide access between Littleton Gardens/Zingel Place and Carp Street:

- Unnamed Walkway in north-south direction located between Auckland Street and Ayres Walkway
- Ayres Walkway
- Rixon’s Arcade (privately owned; covered; closed after business hours)

These walkways of very varied amenity, and provide little inducement to utilise Littleton Gardens’ parking.

In addition to the three walkways, there is a connection through the Sapphire Market Place as well as Gowing Lane connecting Auckland Street with Zingel Place. There is free access from Littleton Gardens to Gipps Street but no formal pedestrian crossing facility at Gipps Street. There are two pedestrian crossing facilities at Carp Street and both are signalised.

While the new Target store in Gipps Street will attract pedestrians from Littleton Gardens/Zingel Place parking area, there is no formal pedestrian crossing (such as zebra crossing, signalled crossing, pedestrian refuge, etc.) between Littleton Gardens and the new Target store.

Figure 17 shows the existing pedestrian connections between parking and retail facilities.
Figure 17: Pedestrian connections between parking and retail facilities in Bega town centre

The intersection of Ayres Walkway, Carp Street and Church Street can be seen as the pedestrian centre point of Bega and as such should be the focus of pedestrian desire lines in both east-west and north-south directions. In its current layout the intersection provides pedestrian crossing facilities slightly to the west of the main desire line. The traffic lights only affect Carp Street. This pedestrian crossing could be enhanced to provide improved connectivity within the town centre.

The mode share of cycling in the Bega town centre appears to be small, based on observations during SKM’s site visits in February and March 2013. BVSC has advised that the town centre does not provide specific infrastructure, such as bike lanes or shared paths, for cyclists but has some limited parking facilities in and around Zingel Place. BVSC is currently developing a draft bike plan and have conducted a user survey in April and May 2013.

5.2 Recommendations

Pedestrian accessibility between parking and retail facilities is the key to providing improved parking opportunities for the town centre. The main pedestrian desire line is between Littleton Gardens/ Zingel Place and Carp Street and three walkways currently facilitate this desire line. The location of and distance between the walkways appears adequate. Ayres Walkway being the central and most used walkway is also the widest whereas Gowing Lane and Rixon’s Arcade are smaller, less prominent and in private ownership. All three walkways currently lack atmosphere and amenity.

The three walkways should be upgraded to improve ease of access and provide a safe and attractive environment including lighting, way-finding and, where possible, seating facilities. The upgrade of Ayres Walk and Rixon’s Arcade could also provide further business opportunities, albeit that Rixon’s Arcade and the unnamed walkway are privately owned.
To upgrade the pedestrian crossing at the intersection of Carp Street and Church Street the following should be considered:

- Implementing traffic lights on Church Street for vehicles.
- Moving the stop line on Church Street in westbound direction to the east of the intersection.
- Implementing a scramble crossing for pedestrians to allow omni-directional crossing.

A pedestrian access between Littleton Gardens and the new Target store should be provided including a formal pedestrian crossing facility at Gipps Street.

It is recommended that BVSC continues with the development of a Bike Plan to generate a framework for the improvement of cycling in Bega town centre.
6. Parking Strategy

6.1 Approach

The parking review and the parking survey indicated that the number of parking spots provided in the Bega town centre is currently around 20% - 25% above peak demand and around 40% above average demand. This leaves room for a significant growth of parking demand. The parking survey also indicated that some areas are more popular for parking than other areas. As a result, it can be concluded that managing the parking supply and demand should focus on maximising parking opportunities for the retail function of the Bega town centre. The basis of this strategy would be the application timing restrictions to parking areas based on distance to key facilities.

For the Bega town centre parking strategy we are looking at three different user groups:

- User Group 1: people who visit single shop for making a quick purchase (e.g. bakery, café, news agent)
- User Group 2: people who visit multiple shops or services (e.g. multiple shops/big supermarket, bank, hair dresser, Council)
- User Group 3: commuters parking for the duration of a work day

In general, parking spots closest to key facilities experience the highest demand and can be identified as ‘most valuable’. Those parking spots should have a high turnover and therefore limited parking time. This would apply best to user group 1 as they often only require a short parking time.

Users that are expected to use a parking spot for longer periods are more likely to accept a longer walk time to their destination. Walk times for this exercise are based on an average walk speed of 1.2 m/s which relates to the following distances:

- 1 minute = 72m
- 2 minutes = 144m
- 3 minutes = 216m
- 4 minutes = 288m
- 5 minutes = 360m

Therefore, central car parks and on-street parking within 5 minute walk from the key facilities should focus on servicing user group 2. The parking areas included in this distance can be found in Figure 18 below.

The user group 3 are less reliant on a parking spot in direct vicinity of their destination as their parking duration is usually a full or half day. The focus for this group is to provide free and unrestricted parking in adequate distance from their destination.

The parking strategy for Bega town centre should include the following approach:

- The key facilities are located along Carp Street and around Zingel Place and the parking strategy should focus on servicing these facilities appropriately.
- The biggest collection of parking spaces is around Zingel Place and the Sapphire Market Place and high quality access to the key facilities needs to be provided.
- Parking spaces closest to the key facilities should have short time restrictions (e.g. 15min or 30min) to encourage a high customer turn-over and serve user group 1.
- Car parks should have long time restrictions (e.g. 2 hours or 3 hours) and their focus should be on serving user group 2.
Unrestricted parking spaces that attract long-term parking should be located furthest away from key facilities to generate short-term parking opportunities close to key facilities.

Figure 18: Walk times from key location in Bega town centre

6.2 Recommendations

As a result of the approach outlined, key recommendations for parking in the Bega town centre include:

- All parking should remain free.
- Parking areas within one minute walking time from key facilities should have a mix of 15 min and 30 min parking restrictions to encourage a high parking turn-over.
- Parking areas within five minutes walking time from key facilities should have a mix of 1 hour and 2 hour parking restrictions.
- Parking areas more than five minutes walking time from key facilities should have unrestricted parking.
- Bega town centre car parks should have a 3 hour parking restriction to allow for ‘multi-stop’ trips.
- All parking areas should provide adequate disabled parking to meet regulatory and practical requirements.
Figure 19 shows the proposed parking restrictions. A different coloured border indicates that the parking restriction is proposed to be changed with the border colour presenting the current parking restrictions.

**Figure 19: Proposed parking restrictions for Bega town centre**

The current parking supply in Bega town centre clearly exceeds demand and Bega is well prepared for the future and can accommodate additional visitors. BVSC can manage the supply of parking spaces by requiring future developments of retail and service facilities to provide their own off-street parking.